

Amendments to the Specification:

Page 2, lines 8 to 21, change to read as follows:

As related arts, a technique of vitrifying an alkoxide into a thin film by ultraviolet light excitation is known and this technique is disclosed, for example, in Applied Physics Letter, Vol. 69, No. 4, pages 487-484 ~~page 482~~ (1996), and Japanese Unexamined Patent Publication (Kokai) Nos. 10-282339 and 10-282499. These Kokai Nos. 10-282339 and 10-282499 are an applied invention of the adhesion technique described in Applied Physics Letter, Vol. 69, No. 4, page 482 (1996) and in all of these techniques, an ultraviolet ray is irradiated on a substrate (first step), an adhesive solution is coated on the UV-irradiated portion and an ultraviolet ray is again irradiated thereon to perform the synthesis of SiO₂ (second step), thereby attaining adhesion.

Page 3, lines 12 to 26, change to read as follows:

The present inventors have made intensive investigations to achieve the above-described object and confirmed that when at least one material is transparent to ultraviolet light, the material can be adhered by using an alkoxide as an adhesive and irradiating ultraviolet light under certain conditions and, moreover, the adhered portion is transparent to ultraviolet light. As a result thereof, the present inventors have succeeded in developing a high-quality adhering method ensuring transparency to ultraviolet light and capable of being easily and simply performed at room temperature, in producing a large-area quartz glass plate adhered by using the method[[,]] ~~and in providing a photo-cleaning apparatus using the large-area quartz glass plate~~. That is, according to the present invention, the following inventions are provided.

Page 3, lines 27 to 32, change to read as follows:

(1) A method for adhering a transparent material[[s]], comprising interposing an alkoxide between two materials, at least one of which comprises a medium transparent to ultraviolet light, externally applying a mechanical pressure to said two materials so as to reduce uneven gaps and improve contact between said two materials,

using a nitrogen or rare absorption, and irradiating ultraviolet light with a wavelength shorter than 200 nm to the ~~on the~~ alkoxide portion, thereby adhering these two materials.

Page 3, lines 33 to 37, change to read as follows:

(2) An adhered quartz glass plate comprising two or more quartz glass plates laterally adhered ~~by SiO₂~~ in accordance with the adhering method as recited (1) above to provide a larger area, with the adhered part being transparent to ultraviolet light at a wavelength shorter than 350 nm.

Page 4, lines 1 to 15, change to read as follows:

(3) A photo-cleaning apparatus comprising a light source part having one or a plurality of excimer lamp(s) or low-pressure mercury lamp(s), ~~a cleaning chamber and a window for transmitting ultraviolet light provided between the light source part and the~~ by which ultraviolet light is irradiated from said light source to an article to be cleaned disposed in a cleaning chamber, which is a photo-cleaning apparatus for cleaning a material to be cleaned by disposing the material in the cleaning chamber and irradiating thereon ultraviolet light from the light from the light source part, wherein characterized in that the adhered quartz glass plate described in (2) above is used for the window between the light source part and the cleaning chamber.

Page 5, from lines 32 to line 18 of page 6, change to read as follows:

~~The~~ Although it is not intended to limit the present invention by the theory, the reason why the alkoxide exhibits an adhesive activity is considered as follows. The alkoxide particularly useful for glasses is a silicon alkoxide and when a silicon alkoxide such as tetramethoxysilane (TMOS) and tetraethoxysilane (TEOS) is irradiated with ultraviolet light, the organic group is released to cause decomposition and the silicon-oxygen bond portion can form bonding with an inorganic or organic material of various types, so that adhesion either to an inorganic material or an organic material can be attained by the alkoxide. The silicon alkoxide is ideally vitrified and becomes SiO₂, but from the standpoint of the object of the present invention, complete vitrification into SiO₂ is not necessarily required and the object can be achieved if necessary adhesion and UV

transparency can be obtained. A metal alkoxide such as zirconium alkoxide, titanium alkoxide, yttrium alkoxide and germanium alkoxide, an alkoxide other than these, or a mixture thereof also undertakes the same reaction. The alkoxide group is not particularly limited and may be a monomer or may be in the form of an oligomer or a polymer. As for the production conditions, suitable conditions may be selected by taking account of the coatability and the size of decomposable volatile component (organic group).

Page 6, lines 19 to 24, change to read as follows:

~~The ultraviolet light as used in the present invention means short wavelength light at a wavelength of 350 nm or less. In the present invention, light at a wavelength shorter than 260 nm and even vacuum ultraviolet light at a wavelength shorter than 200 nm are~~ is suitably used.

Page 6, lines 25 to 32, change to read as follows:

The light source of ultraviolet light for use in the present invention is not limited but examples thereof include a low-pressure mercury lamp ~~having a wavelength in the vicinity of 254 nm and 185 nm~~, and an excimer lamp having a wavelength in the vicinity of 172 nm. Also, radiation light including undulator can be used. The light source is sufficient if it contains ultraviolet light. A laser light source may also be used.

Page 7, lines 3 to 10, change to read as follows:

The conditions in irradiating ultraviolet light, such as wavelength, intensity, time period, atmosphere and temperature, may be appropriately selected but unlike the glass melt-adhesion method, high-temperature heating is not necessary in the present invention and the materials to be adhered (adhered materials) are advantageously free from thermal damage. For example, room temperature may be employed.

Page 7, lines 14 to 21, change to read as follows:

The method for adhering UV-transparent materials of the present invention can be used, for example, as shown in Figs. 1 and 2, for the adhesion of superposing and attaching two quartz glass bodies to each other; the ~~[[. The]]~~ adhesion of superposing and

attaching main planes of two UV-transparent material plates to each other is apparently useful in practice, and various applications can be expected.

Page 7, lines 22 to 27, change to read as follows:

It was ~~confirmed~~ considered that the present invention is particularly useful for adhering two or more sheets of quartz glass in the lateral direction to prepare a larger area quartz glass plate and producing a product such that the enlarged area quartz glass plate is transparent to ultraviolet light.

Page 8, lines 11 to 20, change to read as follows.

Fig. 2 and Figs. 3A to 3F, show an example of the above method of ~~joining~~ ~~[[()]]adhering[[()]]~~ two or more plate materials. In these Figures, 1a and 1b are a glass plate, 2 is a glass stacked body, 3 is an adhered part, 4 is a small plate for adhesion, 6 is a light source and 7 is ultraviolet light. Two glass plates 1a and 1b in various shape may be ~~joined~~ ~~[[()]]adhered[[()]]~~ by placing these plates to face each other as shown in Figs. 3A to 3D, by superposing the edges as shown in Fig. 3E, or by using a small plate 4 for adhesion as shown in Fig. 3F.

Page 8, lines 31 to 34, change to read as follows.

It is preferred to have ~~The adhering method of the present invention preferably~~ ~~has~~ a step of previously polishing the portions corresponding to adhesion surfaces of two materials to smooth the surfaces.

Page 8, lines 35 to 37, change to read as follows:

In the adhesion process, of the present invention the portions corresponding to adhesion surfaces of two materials are more preferably cleaned so as to enhance the adhesive property.

Page 9, lines 1 to 5, change to read as follows.

In the adhesion process, a mechanical pressure is preferably applied to two materials from both sides during the irradiation of ultraviolet light on the portion containing the alkoxide, so as to enhance the adhesive property.

Page 10, lines 17 to 29, change to read as follows:

As shown in Fig. 1, two square quartz glass plates 1a and 1b having a thickness of 1 mm and a one-side length of 2 ~~mm~~ cm were prepared. On one surface of each quartz glass plate, a drop of tetramethyloxysilane (TMOS) [components: TMOS monomer: 91.8%, TMOS oligomer: 3.4%, water/methanol: 4.8%] which is an alkoxide was dripped. Then, the surfaces wetted with TMOS of quartz glasses were superposed one on another and as shown in Fig. 2, ultraviolet light 7 having a peak at a wavelength of 172 nm was irradiated on the two-sheet quartz glass plate 2 from a xenon excimer lamp 6 for 60 minutes. At this time, the distance between the xenon excimer lamp 6 and the quartz glass plate 2 was 2 mm.